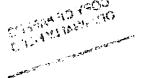


Fig. 1



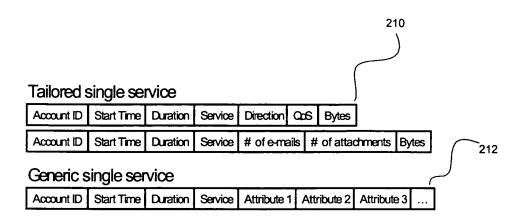


Fig. 2



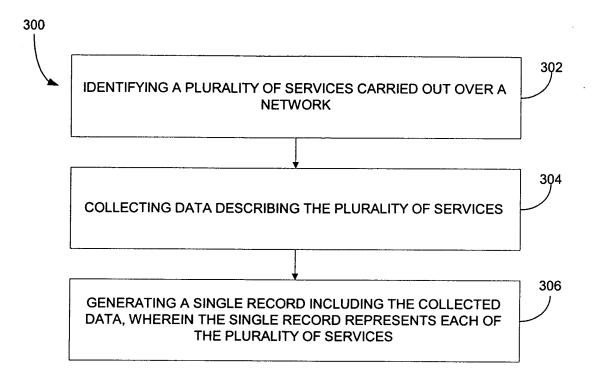
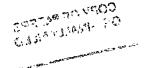


Fig. 3



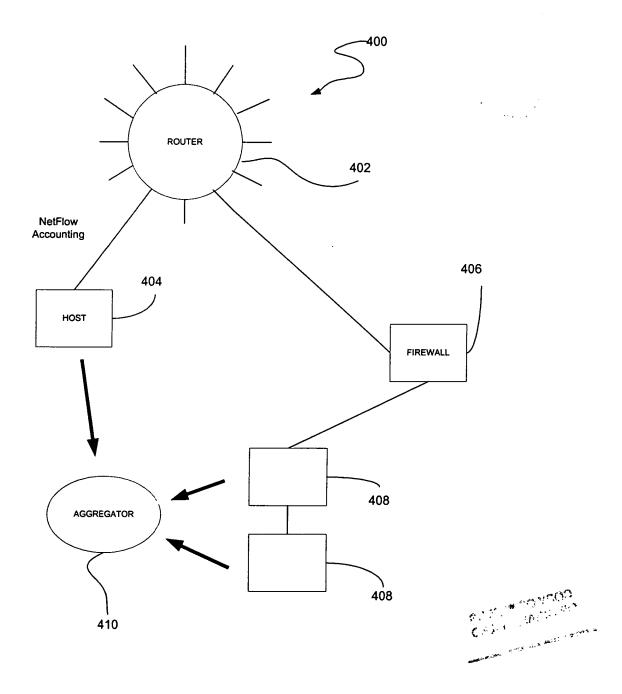


Fig. 4

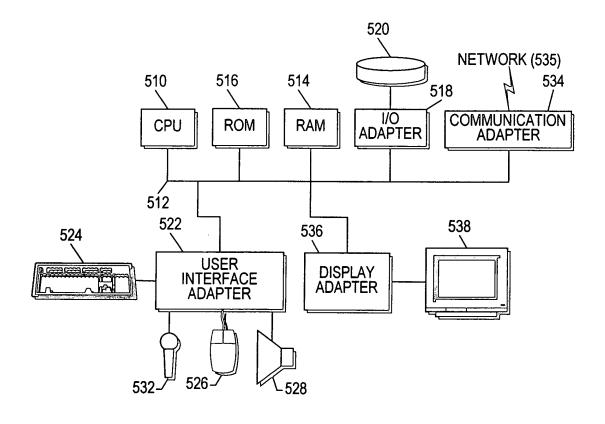


Fig. 5



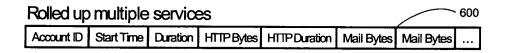


Fig. 6

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authorized to send e-mail to the recipient and then places the e-mail message in the recipient's inbox. The recipient may then use a recipient computer 102 to request their inbox in step 6 from the e-mail system. The e-mail system then sends to the recipient computer in step 7 the inbox information including the e-mail message sent from the sender. The authorization system may provide a service through which a recipient can access their e-mail messages that could not be authorized. The service may be implemented as part of the e-mail system or may be provided by a web site. That service may allow the recipient to view the e-mail messages and indicate which senders should be authorized. Alternatively, the authorization system may place e-mail messages that cannot be authorized in a special e-mail folder.

[0023]

Figure 2 is a block diagram illustrating a configuration of the authorization system implemented to authorize e-mail before being sent to an existing e-mail system. The recipient's e-mail is routed from a sender computer 201 to the authorization system 203 rather than to the existing e-mail system 204. The authorization system then authorizes the e-mail message and forwards it to the existing e-mail system for processing as normal. If the sender cannot be authorized, then the authorization system may store the e-mail message for access by the recipient via a web page or some other mechanism. The sender computer sends an e-mail message in a step 1 to the recipient. The authorization system receives the e-mail message and checks in step 2 whether the sender is authorized to send e-mail to the recipient. If authorized, then the authorization system sends the e-mail message to the existing e-mail system. If not authorized, then the authorization system requests authorization information in step 3 from the sender. The sender provides the authorization information in step 4 to the If the authorization information is correct, then the authorization system. authorization system adds the sender in step 5 to a list of senders who are authorized to send e-mail to the recipient. The authorization system then sends the e-mail message in step 6 to the existing e-mail system. The recipient then may use a recipient computer 202 to request their inbox in step 7 from the existing e-mail system. In response, the existing e-mail system sends in step 8 the inbox including the e-mail message to the recipient computer.

[0024]

Figure 3A is a block diagram illustrating a configuration of the authorization system implemented to retrieve e-mail messages delivered to an existing e-mail system. The authorization system 303 may have the e-mail authentication information (e.g., account name and password) of the recipient for an existing email system 304. The authorization system periodically checks the inbox of the recipient and determines whether any e-mail messages from unauthorized recipients have been received. Alternatively, rather than periodically checking the inbox of the recipient, the recipient's inbox may be configured to automatically forward all e-mail messages to the authorization system using, for example, an inbox assistant. If the authorization system cannot authorize the sender, then the authorization system may automatically delete the e-mail message from the recipient's inbox. A sender computer 301 initially sends an e-mail message in step 1 to the recipient. The e-mail message is routed to the existing e-mail Periodically the authorization system requests the recipient's e-mail messages in step 2 from the existing e-mail system. The existing e-mail system sends the e-mail messages in step 3 to the authorization system. embodiment, the e-mail system need only send the identifications of the senders. The authorization system then checks the authorization of the sender in step 4. If the sender is authorized, the authorization system leaves the e-mail message in the recipient's inbox. If, however, the sender is not currently authorized, then the authorization system requests authorization information in step 5 from the sender. During this authorization process, the authorization system may move the e-mail message to an e-mail folder for unauthorized senders. When the sender is authorized, then the authorization system would move the e-mail message back to the inbox. The sender then provides the authorization information in step 6 to the authorization system. The authorization system verifies the correctness of the authorization information and adds the sender in step 7 to the list of senders who are authorized to send e-mail to the recipient. If the authorization system cannot

authorize the sender, then the authorization system instructs the existing e-mail system in step 8 to remove the e-mail message from the inbox. Otherwise, the e-mail message is left in the inbox. When the recipient requests their inbox in step 9, the existing e-mail system provides the inbox including the authorized e-mail message in step 10 to a recipient computer 302.

[0025]

Figure 3B is a block diagram illustrating a configuration of the authorization system implemented to retrieve e-mail messages delivered to an existing e-mail system and provide the authorized e-mail messages via an e-mail component of the authorization system. This configuration is a hybrid of the configurations of Figure 1 and Figure 3A. This configuration provides an e-mail component like the configuration of Figure 1, but the e-mail messages are sent initially to an existing e-mail system. This configuration retrieves the e-mail messages from the existing e-mail system like the configuration of Figure 3A, but the e-mail messages are provided to the recipient via the authorization system, rather than via the existing e-mail system. A sender computer 311 initially sends an e-mail message in step 1 to the recipient. The e-mail message is routed to an existing e-mail system 314. Periodically the authorization system 313 requests the recipient's e-mail messages in step 2 from the existing e-mail system. The existing e-mail system sends the e-mail messages in step 3 to the authorization system. The authorization system then checks the authorization of the sender in step 4. If the sender is authorized, the authorization system stores the e-mail message in the recipient's inbox of the e-mail component of the authorization system. If, however, the sender is not currently authorized, then the authorization system requests authorization information in step 5 from the sender. The sender then provides the authorization information in step 6 to the authorization system. The authorization system verifies the correctness of the authorization information and adds the sender in step 7 to the list of senders who are authorized to send e-mail to the recipient. If the sender is authorized, the authorization system stores the e-mail message in the recipient's inbox of the e-mail component of the authorization system. If the authorization system, however, cannot authorize the sender, then the authorization system may store the e-mail message in a folder for e-mail messages from unauthorized senders. When the recipient requests their inbox in step 8, the e-mail component of the authorization system provides the inbox including the authorized e-mail message in step 9 to a recipient computer 312.

[0026]

Figures 4-9 illustrate communications between a sender and the authorization system in one embodiment. Figure 4 illustrates an authorization email message that is sent to a sender from the authorization system. authorization e-mail message requests the sender to provide certain authorization The e-mail message 400 includes message area 401 and information. advertisement area 402. The message area identifies the reason for the e-mail message and includes a link to a web page through which the sender can provide The advertisement area may include any the authorization information. advertisement provided by the authorization system. For example, the authorization system may include advertisements of a third party to derive advertising revenue. The advertisement area may include links to web pages associated with the advertisement. The authorization e-mail message, rather than providing a link to a web page, may include the web page itself or may request the sender to reply to the e-mail message with the authorization information included, for example, in the subject line.

[0027]

Figure 5 illustrates a web page through which a sender provides authorization information. The web page 500 is provided to the sender when the sender selects the link included in an authorization e-mail message. The web page includes a request for authorization information. In this example, the sender is requested to identify the picture 501. The user enters "flower" into data entry field 502 and then selects the submit button 503. When the submit button is selected, then the content of the data entry field and an identifier of the e-mail message being authorized is sent to the authorization system. The authorization system may send requests for many different types of authorization information (e.g., ask many different questions) to make it difficult for a computer to automatically provide the correct authorization information. A test for detecting

whether a respondent is a person or computer is known as a "Turing test." Well-known Turing tests include asking the respondent to identify a semantic error in a sentence, to identify a word that is shown in an image with its letters distorted, or to identify a word that is presented audibly. Nevertheless, even if a spamming computer was able to provide the correct authorization information in one instance, then the sender would be authorized to send to that recipient, but not automatically authorized to send to other recipients.

[0028]

Figure 6 illustrates a web page notifying the sender that they have been authorized. Web page 600 indicates that the e-mail message will be forwarded to the recipient and that future e-mail message will be automatically forwarded to that recipient. The web page may also invite the sender to sign up to use the authorization service of the authorization system. Figure 7 illustrates a web page for signing up for the authorization service. In one embodiment, the authorization system may be integrated with an e-mail system. When a user signs up for the e-mail system, they may be automatically signed up for the authorization service. Alternatively, the e-mail system may allow each member to decide if they want to sign up for authorization service. Web page 700 requests that the user provide their e-mail name and password for the new e-mail account.

[0029]

Figure 8 illustrates a web page that a recipient may use to view unauthorized e-mail messages. The user provides their e-mail name and password to gain access to a web portion of the authorization system. Web page 800 includes a list 801 of the unauthorized e-mail messages that were sent to the user and could not be authorized. The authorization system may allow the user to select and view the contents of the e-mail messages. The buttons 802-806 at the bottom of the web page allow the user to indicate that the sender of the selected e-mail message is to be automatically authorized, that the e-mail message is to be removed, that the e-mail message is to be viewed, that all senders of the same domain as the sender of the e-mail message are to be automatically authorized, or that the sender is to be blocked (i.e., e-mail from that sender will automatically be deleted without attempting to authorize the sender). A recipient who is an

employee of a company may want, for example, to automatically authorize all employees of the same company to send e-mail messages.

[0030]

Figure 9 illustrates a web page that a recipient may use to view their list of authorized senders. Web page 900 includes a list 901 of senders who are currently authorized to send e-mail to the recipient. The recipient may use the remove button 902 to remove a sender from the list and may use the add button 903 to add a new sender to list. The asterisk 904 indicates that all senders from the domain "Acme.com" are authorized to send to the recipient. In one embodiment, the authorization system may allow a recipient to maintain a list of senders whose e-mail is to be blocked.

[0031]

Figure 10 is a block diagram illustrating components of the authorization system in one embodiment. The client computers 1010 are connected via communications link 1020 to the authorization server 1030. In this example, the authorization system is configured as a component of an e-mail system. The authorization server includes an e-mail subsystem and a web subsystem. The email subsystem provides standard e-mail capabilities along with the authorization of e-mail messages. The web subsystem allows senders to provide authorization information and recipients to view and modify their authorization information. The authorization server includes a web engine 1030, an e-mail engine 1032, an email component 1033, a prepare authorization request component 1034, a check authorization response component 1035, an authorize e-mail component 1036, an authorized sender table 1037, and an unauthorized e-mail table 1038. The e-mail engine receives e-mail messages directed to the users of the e-mail system. The e-mail engine routes the received e-mail messages to the authorize e-mail component. The authorize e-mail component determines whether the sender is authorized and, if so, forwards the e-mail message to the e-mail component. If the sender is not currently authorized to send e-mail to the recipient as indicated by the authorized sender table, then the authorize e-mail component sends a request for authorization information via e-mail to the sender. The authorization e-mail message may contain a link to a web page through which the sender